

BFRC Window Energy Rating – money saving implications

1. Who are the BFRC?

BFRC stands for British Fenestration Rating Council. It was originally established in 1999 with assistance from Government and the major fenestration trade associations as part of a research project to develop a Window Energy Rating scheme for the UK. BFRC Ltd was established in 2006, to take over and further develop the activities of the original BFRC. BFRC Ltd is now part of the Glass and Glazing Federation – GGF.

All Window Energy Ratings (WERs) are issued by the BFRC. If a company wants to have their own WER, they must comply with the BFRC procedure:

Internal preparation – quality management system in place.

Simulation – the window(s) to be rated are selected and simulated using a computer program to determine a WER rating, this is done by an approved BFRC simulator.

Select an Independent Agency (IA) – an independent agency appointed by the BFRC, is chosen by the window company to assess compliance to the requirements of the scheme.

IA verification – the IA checks that the required quality system is in place and that the window simulation is correct.

BFRC Registration – the IA forwards the results to the BFRC who will issue WER labels and list the company and products on the BFRC website.

Manufacturer uses BFRC label on products – the window manufacturer is now eligible to place labels on their rated windows.

Each window variation has to be simulated and approved before WERs are issued. Any changes will require a new simulation to be conducted. The WER label has to be renewed annually and the IA will check that all the processes are still in order and correct. More information can be found at www.bfrc.org

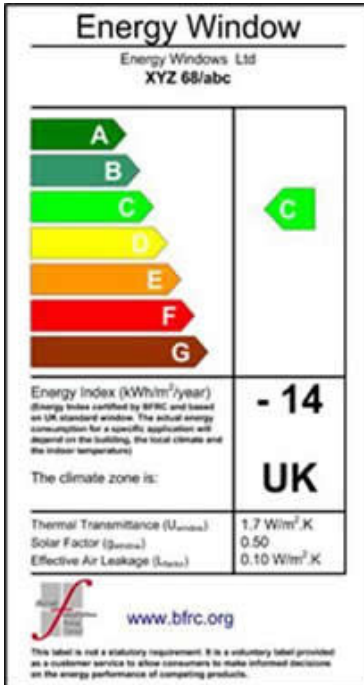
1: What is a Window Energy Rating (WER)?

The window energy rating is the objective method used to assess the total energy performance of a window; it takes into account the materials used (glass, framing materials etc), the air leakage (through gaskets and joints) and the solar gain (energy from the sun), to determine the rating which expresses the energy efficiency of the product. The determined value will place the window type into a rated band (A to G). The rating compares standard size windows; this provides a simple method of comparing different products from either the same supplier or from different suppliers. Most will be familiar with the Energy Efficient labels showing A-G ratings on "white goods", like refrigerators, which operate on the same principle as that for windows.



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What the bands mean



When looking at the label, as well as the band the window falls in to, it is given a figure. In the label shown it is band 'C' and the figure is -14. This means that the window loses 14 KWh/m²/year. This is energy escaping through the window. **Band C is the proposed new Building Regulation minimum requirement.**

At 04/02/2010 British Gas dual fuel Online Saver customers paying by Direct Debit are paying 31.23p per KWh for their fuel: Gas and Electricity on tier 1*.

Estimating that there are around 15m² of glazing in a typical house, this means that the house loses 14 KWh x 15m² x 31.23p = £65.79p per year.

A house glazed with windows that meet current building regs i.e. whole window U-value of 2.0W/m² K or less, would be in WER band 'E' These windows would lose up to £234.23p per year based on the above calculation and an Energy index of -50, as per the table below. Older single glazed or narrow cavity windows would be in lower bands losing more energy. This could be in excess of £330.00 at today's energy costs.

This means that in this example, the householder could save £168.44p per year by changing from an E to a C window. This should easily repay the cost of the enhancements required to change the E to a C within the first year.

BFRC Rating Scale	BFRC Rating KWh/m ² /year
A	0 or greater
B	-10 to <0
C	-20 to < -10
D	-30 to < -20
E	-50 to < -30
F	-70 to < -50
G	Less than -70

An 'A' rated window which has an Energy Index figure of 0 or above, means that the window loses no energy or could actually allow solar energy into the house therefore achieving further savings.

The vast majority of 'low e' standard fitted windows installed today equate to an E on the WER scale.

In addition, the Energy Saving Trust (EST) will allow the use of their coveted Energy Saving Recommended logo, for windows that achieve band 'C' or higher. This generally requires a sealed unit with low e glass, Argon and warm edge spacer bar. **(From October 2010, a band 'B' will be required)**

*taken from British gas website <https://www.britishgas.co.uk/PriceFinder/ShowPrices/>



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Document L and WERs

Document L is a compulsory regulation, WERs are a voluntary option. It is proposed that from April 2010, being enforced in October 2010, that WERs will be the sole/main means of demonstrating that windows comply with building regs.

Document L of the building regulations was revised in April 2002. At this point whole windows (glazing and frame) were given a maximum U-value that they had to conform to. In April 2006 Document L was revised again, giving the following current conditions. **(Due to change in April 2010)**

Replacement windows can have a maximum U-value of 2.0. This generally equates to an 'E' on the WER scale.

Windows in domestic extensions can have a maximum U-value of 1.8. This generally equates to a 'D' on the WER scale.

Windows in new build properties can have a maximum U-value of 2.2. Although this is lower down the scale than the other two situations, other energy saving measures must be taken to give the property a maximum energy consumption rate and emission target. In practice better windows are usually specified as they are more cost effective in achieving lower energy consumption than eg. State of the art heating systems.

Additionally and for all window installations, a centre pane U-value of 1.2 or less overrides the above stipulations. This is generally used for metal framed windows where whole window U-values would not meet the criteria U-values of 1.8 and 2.0. This would generally equate to a 'B' or a 'C' on the WER scale depending on whether warm edge spacer bar is used and the profile insulation properties.

Proposed 2010 changes will see the abandonment of the centre pane U-value criteria. Replacement windows will need to be of WER band 'C' or better. New build will work to a whole window U-value that will be determined through the SAP (standard assessment procedure). It is likely that these will be much lower than the 2.2 W/m²K U-value currently required. The new proposals for new build are asking for zero carbon emitting homes from 2016. This requires a window to be 0.8 W/m²K.

Moving windows up the WER scale

The energy rating label runs from A-G with band 'E' as the lowest level permitted for replacement windows under current (pre April 2010) Document L of the building regulations. This generally requires a standard 'low e' sealed unit.

'C' rated windows would generally require a sealed unit with low e glass, Argon and possibly warm edge spacer bar. This is the proposed minimum level from October 2010

'B' rated windows would generally require a sealed unit with soft coat low e glass, Argon and warm edge spacer bar.

'A' rated windows would generally require a sealed unit with soft coat low e, low iron glass, Argon and warm edge spacer bar.

